

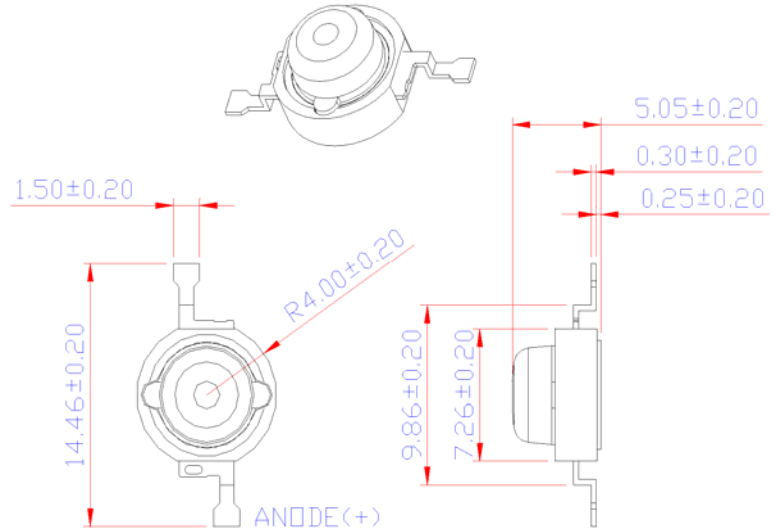


## BriLux 1W Emitter

### BTP-87XXCG-XX-X/X



#### Package Dimension



Tolerance: ± see spec

Unit: mm

#### Features

- Highest Lumen Per Watt
- Long Operational Life
- White or Black Housing
- Superior ESD Protection
- Instant Light (less than 100ns)
- Compatible to Luxeon's "Batwing"

#### Applications

- Accent Light/Down Light/Spot Light
- Automotive Exterior/Interior Light
- Large Area LCD Backlights
- Reading Light
- Marine/Miner's Lighting
- Portable Flashlight/ General Lighting

#### Optical Characteristics at $T_J=25^{\circ}\text{C}$ , $I_F=350\text{mA}$

PART NUMBER	Emitting Color	LED Chip Material	Lens Color	Wavelength (nm)		Drive Voltage @ 350mA	Luminous Flux (lm) @350mA	VIEW ANGLE $2\theta_{1/2}$ (deg)
				Min	Max			
BTP-87NRCG-XX-X/X	Normal Red	AlInGaP	Water Clear	620	630	2.20V	27 lm	90
BTP-87AMCG-XX-X/X	Amber	AlInGaP	Water Clear	610	620	2.20V	30 lm	90
BTP-87YECG-XX-X/X	Yellow	AlInGaP	Water Clear	585	595	2.20V	25 lm	90
BTP-87BLCG-XX-X/X	Blue	AlInGaN	Water Clear	460	475	3.50V	7 lm	90
BTP-87PGCG-XX-X/X	Green	AlInGaN	Water Clear	515	535	3.20V	25 lm	90
BTP-87WWCG-XX-X/X	Warm White	AlInGaN	Water Clear	2800K	3800K	3.50V	20 lm	90
BTP-87WHCG-XX-X/X	White	AlInGaN	Water Clear	5000K	8000K	3.50V	25 lm	90

#### Notes:

- 1) Picture for illustration purpose only. Please refer to outline dimension for actual package size.
- 2) Flux is measured with the accuracy of  $\pm 15\%$ . Please refer to Flux Selection Guide
- 3) CCT is measured with the accuracy of  $\pm 400\text{K}$ . Please refer to CCT Selection Guide
- 4)  $V_F$  is measured with the accuracy of  $\pm 0.15\text{V}$ . Please refer to  $V_F$  Selection Guide

## BriLux 1W Batwing Emitter

**BTP-87XXCG-XX-X/X**

Absolute Maximum Ratings at  $T_J=25^{\circ}\text{C}$

Parameter	Red/Amber/Yellow	White/Blue/Green
Power Dissipation (W)	0.77	1.22
DC Forward Current (mA) <sup>[1]</sup>	350	350
Peak Pulsed Forward Current (mA) <sup>[4]</sup>	1000	1000
Average Forward Current (mA)	350	350
Reverse Voltage (V)	5	5
Reverse Current (uA)	50	50
ESD Sensitivity (V) <sup>[2]</sup>	2,000	2,000
LED Junction Temperature at 350mA ( $^{\circ}\text{C}$ ) <sup>[3]</sup>	125	125
Thermal Resistance Junction to Board ( $^{\circ}\text{C}/\text{W}$ )	15	15
Temperature Coefficient of $V_F$ (mV/ $^{\circ}\text{C}$ )	-2	-2
Storage Temperature ( $^{\circ}\text{C}$ )	-40 to +120	-40 to +120
Operating Temperature ( $^{\circ}\text{C}$ )	-30 to +110	-30 to +110
Lead Soldering Temperature ( $^{\circ}\text{C}$ ) <sup>[4]</sup>	240 $^{\circ}\text{C}$ for 5 seconds max	240 $^{\circ}\text{C}$ for 5 seconds max

### Application Notes:

1. Proper forward current must be observed to maintain the junction temperature below maximum rating
2. Although all products listed are class one ESD protection (+/- 2KV by HBM mode), care must be fully taken when handling products
3. Specification is subjected to change for improvements without notice.
4. Test conditions:  $t_p \leq 10\mu\text{s}$ , duty cycle = 0.005
5. CAUTION: When lighting up, the emitter will become very hot if it is not attached to a heat sink. Please provide proper heat management to prevent damage to the emitter.



#### WARNING

This range of LEDs is produced with die having a high radiant flux. Care must be taken when viewing the product at close range as the light may be intense enough to cause damage to the human eye.

**Note:** Industry standard procedures regarding static must be observed when handling this product.

# BriLux 1W Batwing Emitter

## BTP-87XXCG-XX-X/X

CCT, Flux and V<sub>F</sub> Selection Guide (@ I<sub>F</sub>=350mA)

### BTP-87XXCG-XX-X/W/B

White Housing (Optional: B=Black)

#### Wavelength Ranks Selection

Color	Bin	λ <sub>D</sub> (nm)	
		Min	Max
Blue	B5	460	465
	B6	465	470
	B7	470	475
	XX	460 – 475	
Green	G6	515	520
	G7	520	525
	G8	525	530
	G9	530	535
	XX	515 – 535	
Red	XX	620 – 630	
Amber	XX	610 – 620	
Yellow	XX	585 – 595	

#### Flux Ranks Selection

Color	Bin	Flux (lumens)
Blue	H	4.5~6
	J	6~8
	K	8~10
	X	Default Full Range
Red Amber Yellow Green White	M	14~18
	N	18~23
	P	23~30
	Q	30~39
	R	39~50
	X	Default Full Range

#### CCT Ranks Selection

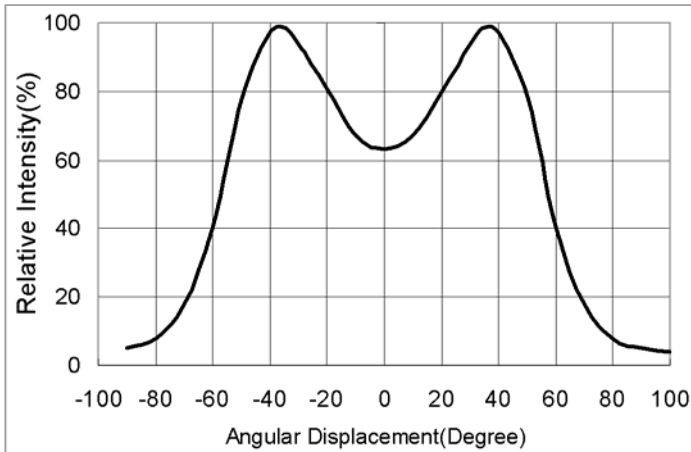
Color Temp	Bin	CCT(K)	
		Min	Max
Warm White	00	2800	3300
	01	3300	3800
	XX	2800K – 3800K	
White	02	5000	6000
	03	6000	7000
	04	7000	8000
	XX	5000K – 8000K	

#### V<sub>F</sub> Ranks Selection

Color	Bin	V <sub>F</sub> (V)	
		Min	Max
Red Amber Yellow	V04	2.0	2.2
	V05	2.2	2.4
	V06	2.4	2.6
	V07	2.6	2.8
	VXX(Full)	2.0~2.8	
White Blue Green	V08	2.8	3.0
	V09	3.0	3.2
	V10	3.2	3.4
	V11	3.4	3.6
	V12	3.6	3.8
	VXX(Full)	2.8~3.8	

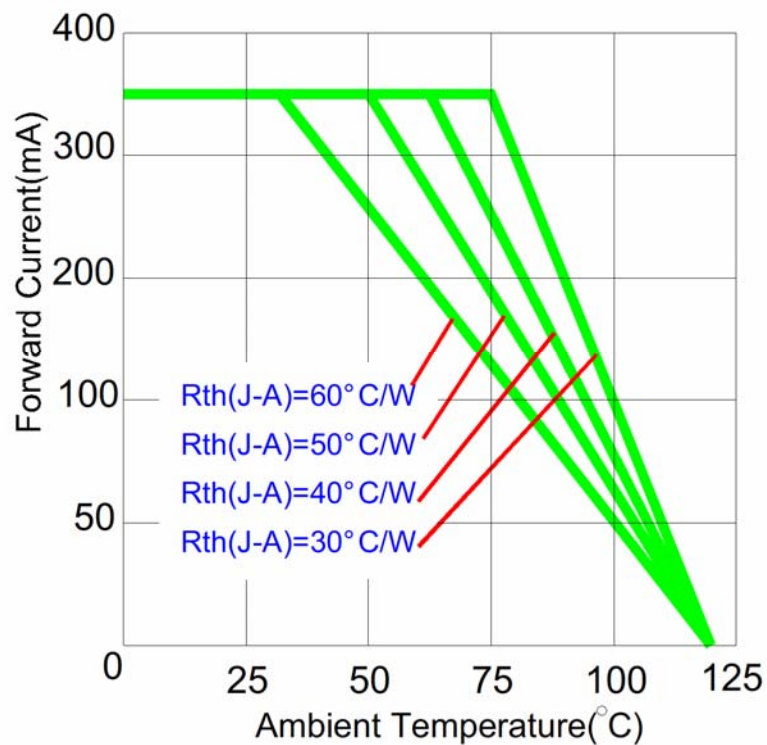
(Please specify on order, otherwise, default full range of V<sub>F</sub>)

### Typical Radiation Pattern for Batwing Emitter



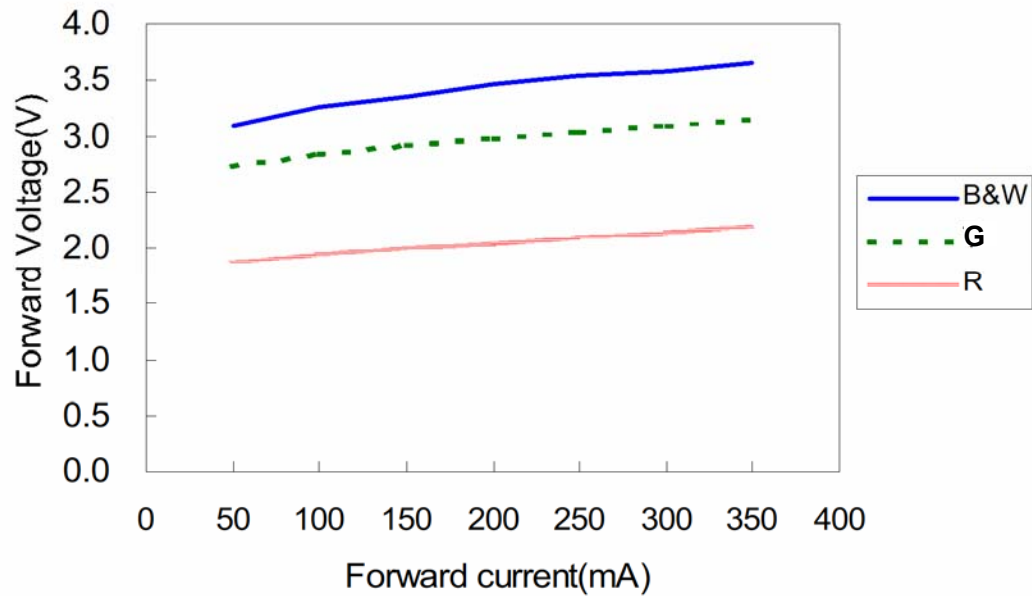
**Fig. 1 Typical Radiation Pattern**

### Operating Current & Ambient Temperature



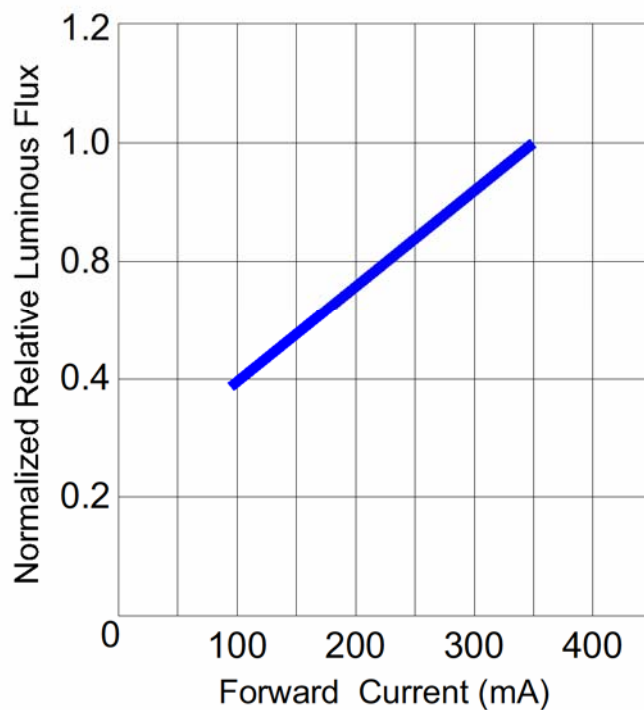
**Fig. 2 Forward Current vs Ambient Temperature**

### Operating Current & Forward Voltage



**Fig. 3. Forward Current vs Forward Voltage**

### Current & Luminous Flux



**Fig. 4 Forward Current vs Luminous Flux**



**DB LECTRO**  
COMPOSANTS ÉLECTRONIQUES  
ELECTRONIC COMPONENTS

## **BriLux 1W Batwing Emitter**

### **BTP-87XXCG-XX-X/X**

#### **Important Notes:**

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- In developing your design, please ensure that Brilliance Technologies products are used within specified operating ranges as set forth in the most recent Brilliance Technologies data sheets.

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